

CLAIMS

1 1. An optimization system for processing encoded video data, comprising:
2 a frame analysis system that determines if a current video frame having an
3 overlaid area acts as a reference for future video frames; and
4 a system for identifying a skippable region in the overlaid area.

1 2. The optimization system of claim 1, wherein the frame analysis system examines a
2 picture type of the current video frame, and wherein the identification system identifies
3 the entire overlaid area as the skippable region if the current video frame comprises a B
4 picture.

1 3. The optimization system of claim 1, wherein the frame analysis system examines a
2 sequence of video frames, and wherein the identification system identifies the entire
3 overlaid area as the skippable region if none of the sequence of video frames acts as
4 reference frames.

1 4. The optimization system of claim 1, further comprising a motion vector analysis
2 system that calculates a motion vector range for the current video frame.

1 5. The optimization system of claim 4, wherein the skippable region comprises the
2 overlaid area less an area defined by the motion vector range.

1 6. The optimization system of claim 1, further comprising a motion vector analysis
2 system that examines motion vectors in a predicted frame that references the current
3 video frame in order to identify prediction macroblocks in the overlaid area of the current
4 video frame.

1 7. The optimization system of claim 6, wherein the skippable region comprises the
2 overlaid area less the prediction macroblocks identified in the overlaid area of the current
3 video frame.

1 8. The optimization system of claim 6, wherein the predicted frame includes the overlaid
2 area, and wherein the motion vector analysis system does not examine motion vectors in
3 the overlaid area of the predicted frame.

1 9. The optimization system of claim 1, further comprising a system for examining side
2 information in the encoded video data.

1 10. The optimization system of claim 1,
2 wherein the frame analysis system determines a plurality of predicted frames that
3 reference the current video frame;
4 wherein the identification system identifies a plurality of skippable regions; and
5 wherein a final skippable region is determined as a cross set of each of the
6 identified skippable regions.

1 11. The optimization system of claim 1, further comprising a decoder for decoding the
2 encoded video data.

1 12. The optimization system of claim 11, wherein the skippable region is utilized by a
2 component of the decoder to reduce computational complexity.

1 13. The optimization system of claim 12, wherein the component is selected from the
2 group consisting of: an inverse scanning/inverse quantization system, an inverse discrete
3 cosine transform system, a motion compensation system, and a residual adding system.

1 14. A program product, stored on a recordable medium, that when executed processes
2 encoded video data, the program product comprising:

3 means for determining if a current video frame having an overlaid area acts as a
4 reference for future video frames; and
5 means for identifying a skippable region in the overlaid area.

1 15. The program product of claim 14, further comprising means for calculating a motion
2 vector range for a predicted frame that references the current video frame.

1 16. The program product of claim 15, wherein the skippable region comprises the
2 overlaid area less an area defined by the motion vector range.

1 17. The program product of claim 14, further comprising means for examining motion
2 vectors in a predicted frame that references the current video frame to identify prediction
3 macroblocks in the current video frame.

1 18. The program product of claim 17, wherein the skippable region comprises the
2 overlaid area less the identified prediction macroblocks identified in the overlaid area.

1 19. The program product of claim 14, further comprising means for examining side
2 information in the encoded video data.

1 20. A method of processing encoded video data, comprising the steps of:
2 determining if a current video frame having an overlaid area acts as a reference
3 for future video frames; and
4 identifying a skippable region in the overlaid area.

1 21. The method of claim 20, wherein the identifying step comprises the steps of:
2 calculating a motion vector range for a predicted frame that references the current
3 video frame; and
4 identifying the skippable region as comprising the overlaid area less an area
5 defined by the motion vector range.

1 22. The method of claim 20, wherein the identifying step comprises the steps of:
2 examining motion vectors in a predicted frame that references the current video
3 frame to identify prediction macroblocks in the current video frame; and
4 identifying the skippable region as comprising the overlaid area less the
5 prediction macroblocks identified in the overlaid area.

1 23. The method of claim 20, wherein the determining step includes the step of:
2 examining side information in the encoded video data.

1 24. The method of claim 20, wherein the identifying step includes the step of:
2 examining side information in the encoded video data.